

We claim:

1. A metal truss, comprising:

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a pair of elongated top chord members each having a first end and a second end,
the top chord members connected to each other at the first end;

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a first elongated bottom chord member, the ends of the first bottom chord member
connected to the top chord members adjacent the second ends of the top chord
members;

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a second elongated bottom chord member, the ends of the second bottom chord
member connected to the top chord members adjacent the second ends of the top
chord members such that the second bottom chord member is spaced from the
first bottom chord member; and

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at least one web member positioned between and interconnecting at least one top
chord member and the first bottom chord member, one end of the web member
connected to the at least one top chord member and the other end of the web
member connected to the first bottom chord member.

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2. A metal truss as recited in claim 1, wherein the ends of the second bottom chord
member connect with the second ends of the top chord members at a point spaced from
the second ends of the top chord members.

3. A metal truss as recited in claim 1, wherein the connected top chord members form an
apex of an angular shape, and with the second bottom chord member, form a triangle.

4. A metal truss as recited in claim 1, wherein the thickness of the metal comprising the top and bottom chord members and the at least one web member is less than about 1.2 mm.

5. A metal truss as recited in claim 1, further comprising at least one tensile element connected between the first bottom chord member and the second bottom chord member, wherein the point of connection of the tensile element to the first bottom chord member is spaced from the point of connection of the at least one web member to the first bottom chord member.

6. A metal truss as recited in claim 1, further comprising insulating material disposed between the first bottom chord member and the second bottom chord member at the point of connection of the at least one web member to the first bottom chord member.

7. A metal frame building system including a frame comprising a plurality of wall frames, each of the wall frames having a top end, the building system comprising:

a plurality of metal trusses, each of the trusses comprising

a pair of elongated top chord members each having a first end and a second end, the top chord members connected to each other at the first end;

a first elongated bottom chord member, the ends of the first bottom chord member connected to the top chord members adjacent the second ends of the top chord members;

a second elongated bottom chord member, the ends of the second bottom chord member connected to the top chord members adjacent the second ends of the top chord members such that the second bottom chord member is spaced from the first bottom chord member; and

at least one web member positioned between and interconnecting at least one top chord member and the first bottom chord member, one end of the web member connected to the at least one top chord member and the other end of the web member connected to the first bottom chord member,

wherein the plurality of trusses are adapted to be erected upon the building system frame such that the second bottom chord member spans at least two of the wall frames and is connected to the top ends of the respective wall frames.

8. A building system as recited in claim 7, wherein the ends of the second bottom chord member connect with the second ends of the top chord members at a point spaced from the second ends of the top chord members.

9. A building system as recited in claim 7, wherein the thickness of the metal comprising the top and bottom chord members and the at least one web member is less than about 1.2 mm.

10. A building system as recited in claim 7, further comprising at least one tensile element connected between the first bottom chord member and the second bottom chord member, wherein the point of connection of the tensile element to the first bottom chord member is spaced from the point of connection of the at least one web member to the first bottom chord member.

11. A building system as recited in claim 7, further comprising insulating material disposed between the first bottom chord member and the second bottom chord member at the point of connection of the at least one web member to the first bottom chord member.

12. A building, comprising:

a frame including a plurality of wall frames, each of the wall frames having a top end;

a plurality of metal trusses, each of the trusses comprising

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a pair of elongated top chord members each having a first end and a second end, the top chord members connected to each other at the first end,

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a first elongated bottom chord member, the ends of the first bottom chord member connected to the top chord members adjacent the second ends of the top chord members,

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a second elongated bottom chord member, the ends of the second bottom chord member connected to the top chord members adjacent the second ends of the top chord members such that the second bottom chord member is spaced from the first bottom chord member, and

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at least one web member positioned between and interconnecting at least one top chord member and the first bottom chord member, one end of the web member connected to the at least one top chord member and the other end of the web member connected to the first bottom chord member,

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wherein the plurality of trusses are erected upon the frame such that the second bottom chord member spans at least two of the wall frames and is connected to the top ends of the respective wall frames; and

roof material fastened to the top chord members.

13. A building as recited in claim 12, wherein the ends of the second bottom chord member connect with the second ends of the top chord members at a point spaced from the second ends of the top chord members.

5 14. A building as recited in claim 12, wherein the thickness of the metal comprising the top and bottom chord members and the at least one web member is less than about 1.2 mm.

10 15. A building as recited in claim 12, further comprising at least one tensile element connected between the first bottom chord member and the second bottom chord member, wherein the point of connection of the tensile element to the first bottom chord member is spaced from the point of connection of the at least one web member to the first bottom chord member.

15 16. A building as recited in claim 12, further comprising insulating material disposed between the first bottom chord member and the second bottom chord member at the point of connection of the at least one web member to the first bottom chord member.

17. A metal truss, comprising:

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a plurality of elongated top chord members, the top chord members connected to each other end to end so that the connected top chord members have two free ends;

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a first elongated bottom chord member, the ends of the first bottom chord member connected to the top chord members adjacent the free ends of the connected top chord members;

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a second elongated bottom chord member, the ends of the second bottom chord member connected to the top chord members adjacent the free ends of the

connected top chord members such that the second bottom chord member is spaced from the first bottom chord member; and

at least one web member positioned between and interconnecting at least one top chord member and the first bottom chord member, one end of the web member connected to the at least one top chord member and the other end of the web member connected to the first bottom chord member.

18. A metal truss, comprising:

a pair of elongated top chord members each having a first end and a second end, the top chord members connected to each other at the first end;

a first elongated bottom chord member;

means for connecting the first bottom chord member to the top chord members adjacent the second ends of the top chord members;

a second elongated bottom chord member;

means for connecting the second bottom chord member to the first bottom chord member such that the second bottom chord member is spaced from the first bottom chord member; and

at least one web member positioned between and interconnecting at least one top chord member and the first bottom chord member, one end of the web member connected to the at least one top chord member and the other end of the web member connected to the first bottom chord member.

19. A metal truss as recited in claim 18, wherein the first bottom chord member connecting means includes fasteners for connecting the ends of the first bottom chord member directly to the top chord members.

5 20. A metal truss as recited in claim 18, wherein the first bottom chord member connecting means includes a heel truss member vertically fastened between each end of the first bottom chord member and the top chord members.

10 21. A metal truss as recited in claim 18, wherein the second bottom chord member connecting means includes at least one tensile element connected between the first bottom chord member and the second bottom chord member, wherein the point of connection of the tensile element to the first bottom chord member is spaced from the point of connection of the at least one web member to the first bottom chord member.

15 22. A metal truss as recited in claim 18, further comprising insulating material disposed between the first bottom chord member and the second bottom chord member at the point of connection of the at least one web member to the first bottom chord member.

20 23. A metal frame building system including a frame comprising a plurality of wall frames, each of the wall frames having a top end, the building system comprising:

a plurality of metal trusses, each of the trusses comprising

25 a pair of elongated top chord members each having a first end and a second end, the top chord members connected to each other at the first end;

a first elongated bottom chord member;

30 means for connecting the first bottom chord member to the top chord members adjacent the second ends of the top chord members;

a second elongated bottom chord member;

5 means for connecting the second bottom chord member to the first bottom chord member such that the second bottom chord member is spaced from the first bottom chord member; and

10 at least one web member positioned between and interconnecting at least one top chord member and the first bottom chord member, one end of the web member connected to the at least one top chord member and the other end of the web member connected to the first bottom chord member,

15 wherein the plurality of trusses are adapted to be erected upon the building system frame such that the first bottom chord member spans at least two of the wall frames and is connected to the top ends of the respective wall frames, and wherein the ends of the second bottom chord member extend between the inner surfaces of the wall frames.

20 24. A building system as recited in claim 23, wherein the first bottom chord member connecting means includes fasteners for connecting the ends of the first bottom chord member directly to the top chord members.

25 25. A building system as recited in claim 23, wherein the first bottom chord member connecting means includes a heel truss member vertically fastened between each end of the first bottom chord member and the top chord members.

30 26. A building system as recited in claim 23, wherein the second bottom chord member connecting means includes at least one tensile element connected between the first bottom chord member and the second bottom chord member, wherein the point of connection of the tensile element to the first bottom chord member is spaced from the point of connection of the at least one web member to the first bottom chord member.

27. A building system as recited in claim 23, further comprising insulating material disposed between the first bottom chord member and the second bottom chord member at the point of connection of the at least one web member to the first bottom chord member.

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28. A building, comprising:

a frame including a plurality of wall frames, each of the wall frames having a top end;

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a plurality of metal trusses, each of the trusses comprising

a pair of elongated top chord members each having a first end and a second end, the top chord members connected to each other at the first end,

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a first elongated bottom chord member,

means for connecting the first bottom chord member to the top chord members adjacent the second ends of the top chord members,

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a second elongated bottom chord member,

means for connecting the second bottom chord member to the first bottom chord member such that the second bottom chord member is spaced from the first bottom chord member, and

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at least one web member positioned between and interconnecting at least one top chord member and the first bottom chord member, one end of the web member connected to the at least one top chord member and the other end of the web member connected to the first bottom chord member,

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wherein the plurality of trusses are erected upon the frame such that the first bottom chord member spans at least two of the wall frames and is connected to the top ends of the respective wall frames, and wherein the ends of the second bottom chord member extend between the inner surfaces of the wall frames; and
5 roof material fastened to the top chord members.

29. A building as recited in claim 28, wherein the first bottom chord member connecting means includes fasteners for connecting the ends of the first bottom chord member
10 directly to the top chord members.

30. A building as recited in claim 28, wherein the first bottom chord member connecting means includes a heel truss member vertically fastened between each end of the first bottom chord member and the top chord members.
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31. A building as recited in claim 28, wherein the second bottom chord member connecting means includes at least one tensile element connected between the first bottom chord member and the second bottom chord member, wherein the point of connection of the tensile element to the first bottom chord member is spaced from the point of connection of the at least one web member to the first bottom chord member.
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32. A building as recited in claim 28, further comprising insulating material disposed between the first bottom chord member and the second bottom chord member at the point of connection of the at least one web member to the first bottom chord member.
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33. A metal truss, comprising:

a plurality of elongated top chord members, the top chord members connected to each other end to end so that the connected top chord members have two free ends;
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a first elongated bottom chord member;

5 means for connecting the first bottom chord member to the top chord members adjacent the second ends of the top chord members;

a second elongated bottom chord member;

10 means for connecting the second bottom chord member to the first bottom chord member such that the second bottom chord member is spaced from the first bottom chord member; and

15 at least one web member positioned between and interconnecting at least one top chord member and the first bottom chord member, one end of the web member connected to the at least one top chord member and the other end of the web member connected to the first bottom chord member.